COLLIDER ACCELERATOR SHUTDOWN SCHEDULE

SUMMER 2004 SHUTDOWN

R. Zaharatos –May 12, 2004

SHUTDOWN PERIODS:

RHIC: May 15 to September 20 , 2004

AGS & LINAC: May 21 to September 20, 2004

AGS RING SECURED FOR TESTING(NO ACCESS 0800-1630) – JULY 12-AUG. 1

BOOSTER: June 21 to September 20, 2004

(NSRL Run June 7-21)

RHIC End OF Run/Warm-up Plan

Saturday May 15

- End of beam. 8:00 AM
- 8AM-4 PM-Preparation for Hi-Potting
  - **Vacuum group doing cold leak testing**
- 4 PM: **Low ring pressures testing**– 4 atm average
  - Evaluate at lower pressure
    - Hi-Pot leakage current
    - Mass flows controller flow capacity
    - Ring pressure drop
  - Lower ring pressure to 3.5 atm
    - Repeat measurements

Ring Warm Up : Sunday 516- Friday 5/21

- **Sunday May 16**
  - Start Warm-up of both rings to Room Temperature.
    - Blue First.
  - Use 1005e compressor for flow during warm-up

Warm Testing: 5/21 Until about 5/27

- **5/21 – Both Rings at room temperature.** Cryostats can be penetrated (triplet being opened for roll correction may be an exception)
- **Magnet Electrical Checking**- requires Flow through both rings using 1005e compressor
- **Warm Leak Checking** – requires line pressurizing/evacuating

AFTER MEMORIAL DAY: APPLY LOTO-START CRYO SHUTDOWN WORK

PRIMAY JOBS:

JOBS STATUS CODE: **C** complete **IP** in-process **RS** reschedule
CAN cancelled ***** additions

AGS RING

1. Install 9 new Horz. Sextupole Magnets in the AGS Ring at the 13 locations. A13, B13, C13 etc.

2. Install Klixons on all 12 Horz. Sextupole Magnets

3. Install cables around the ring for Horz., Verti., and Dynamic Sextopole Klixon monitoring to Bldg. 929.

4. Install BLW's (#6 awg welding cable) around MM at the following locations, A5, A6, A19, A20, B1, B2, B15, B16 and A1, A2, A15, A16, B5, B6, B19, B20

COLD SNAKE INSTALLATION

5. A20 outer ring wall penetration for new sleeve
6. A20 MW – Move device to A15 after modifications
7. A20 Flying Wire – Removal of Device from Ring
8. A20 Current Transformer – Move device to A15 after modifications.

9. UXF1 – Replace Current Transformer

10. B15 BLIP Transformer I/L
    a) Install new transformers
    b) Test all new controls.

10. Sextupole Magnets
    a) Build up spare magnets
    b) Swap out all "13" locations in ring.

12. AC Dipole – Modify Amplifiers

13. IPM –
    a) Upgrade IPM Electronics including moving equipment out of tunnel (C14 Alcove)
    b) Modify vacuum ports as necessary.
    c) Investigate HV Distribution
    d) Investigate Corrector Magnet Wiring
    e) Test all new controls.

14. C15 Polarimeter – Upgrade controls

AGS EXTERNAL

1. Siemens – Install New Exciter Power Supply, Transformer and all it's control and power cables.

2. Install covers over all outdoor wiring sleeves to Ring.

3. A18 House – Cold Snake Equipment Installation

BOOSTER RING

1. BTA foil drive sector valve installation

2. Pull BTA foil stripper and replace foils

3. TTB Replace Harp 29/141

4. D3 IPM – Upgrade

5. E7 Half Cell – Removal/Repair/Reinstallation

C-A COMPLEX CABLING INSTALLATIONS

1	Sector 2	BPM Sector 2, 44 Cables
2	Sector 3	BPM Sector 3, 88 Cables
3	Sector 4	BPM Sector 4, 84 Cables
4	Sector 5	BPM Sector 5, 52 Cables
5	Sector 6	BPM Sector 6, 56 Cables
6	Sector 11	BPM Sector 11, 80 Cables
7	Sector 12	BPM Sector 12, 84 Cables
8	Sector 6	Collimators Sector 6, 9 Cables
9	Sector 10	Collimators Sector 10, 9 Cables
10	Sector 6	Pin Diodes Sector 6, 8 Cables
11	Sector 10	Pin Diodes Sector 10, 8 Cables
12	Sector 1	ZDC Sector 1, 5 Cables
13	Sector 2	ZDC Sector 2, 5 Cables
14	Sector 5	ZDC Sector 5, 5 Cables

15	Sector 6	ZDC Sector 6, 5 Cables
16	Sector 7	ZDC Sector 7, 5 Cables
17	Sector 8	ZDC Sector 8, 5 Cables
18	Sector 9	ZDC Sector 9, 5 Cables
19	Sector 10	ZDC Sector 10, 5 Cables
20	Sector 4	Stochastic Cooling Sector 4, 10 Cables
21	12 IR	Jet Polarimeter, (TBD # of Cables)
22	Sector 12	CNI Polarimeter (TBD # of Cables)
23	Power Supply System 1004B	1004B output compartments to 1004B control rm
		AGS
1	B15	BLIP I/L Transformers, 10 Cables
2	C15	C15 Polarimeter (TBD # of Cables)
3	A18 House to AGS Ring A18	Snake Power Supplies Corrector power supplies Warm up heaters
		ATR
1	U U/S	UF2 Flag (TBD # of Cables)
		BOOSTER
1	BTA	Foil Stripper BTA (TBD # of Cables)

RHIC

GROUP: RHIC Tunnel and Support Equipment – Jobs by Sector – G. McIntyre (ext. 7037, BP 7187)

Maintenance Period: Summer Shutdown 2004

PROPOSED RHIC WORK FOR SHUTDOWN 2004, BY SECTOR

Prepared by: G.T. McIntyre x7037

Sector(s)	Device / Modification	Cognizant Person	Estimated Work Date
All sectors	MAINTENANCE ON DIN RAIL BLOCKS	Zapasek, Ron	
	TEMP. SENSORS ON TRIPLETS & DX	Zapasek, Ron	
	GI gate networked	Williams, Neville	
	VOLTAGE MONITORING SYSTEM	Zapasek, Ron	
	Upgrade lighting & repair (contactors)	Benante, John	
	Checkout & repair of BLM System	Lehn, Dan	
	Fuse AC power to fans in control racks	Venegas, Bill	
	Support BPM chassis moves as needed	Venegas, Bill	
	Check and clean filters in Controls alcove chassis	Venegas, Bill	
	Replacement of warm beampipes with NEG pipes	Hseuh, H.C.	
	Cold & Warm testing of Magnet Electric System	Ganetis, George, Ribaudo, Paul	
	Preventative Maintenance on overhead cranes	Benante, John	
	Relief valve replacement	Nicoletti, Anthony	
Sector 1	Moveable BPM - covers & inspection	Lehn, Dan	
Sector 1	Roman Pots - Inspect & investigate +5V loss	Lehn, Dan	
Sector 1	Warm Bore - cable re-organization	Lehn, Dan	
Sector 1	ZDC under C-A control	Drees, Angelika, Lehn, Dan	
Sector 1	NEG pipes, bake (Y&B warm bore)	Hseuh, H.C.	
Sector 1	IPM modifications	Lehn, Dan	
Sector 2	BPM System - Module relocation - Alcove 3A	Lehn, Dan	
Sector 2	Moveable BPM - covers & inspection	Lehn, Dan	
Sector 2	Roman Pots - Inspect & investigate +5V loss	Lehn, Dan	
Sector 2	Warm Bore - cable re-organization	Lehn, Dan	
Sector 2	Schottky Cavity - Repair leak/ Recommission motion control /Covers	Lehn, Dan, Hseuh, H.C.	
Sector 2	Tune meter system - Maintenance	Lehn, Dan	
Sector 2	ZDC under C-A control	Drees, Angelika, Lehn, Dan	
Sector 2	NEG pipes, bake (Y&B warm bore), (Schottky repair, Y&B ?)	Hseuh, H.C.	
Sector 2	IPM modifications	Lehn, Dan	
Sector 2	Card reader in new roll-up door at IP2	Williams, Neville	
Sector 3	BPM System - Module relocation - Alcove 3C	Lehn, Dan	
Sector 3	Adding connectors to Quench Detection cable (Snake)	Ribaudo, Paul	2-3 days
Sector 3	Re-certification of RF's PASS system	Williams, Neville	5 days
Sector 4	TSP transformer switch assembly mounting and termination	Smart, Loralie	2-3 weeks

Sector 4	BPM System - Module relocation - Alcove 5A	Lehn, Dan	
Sector 4	RF testing throughout shutdown	Brennan, Mike	
Sector 4	Re-positioning of Stochastic cooling equipment	Lehn, Dan	
Sector 4	Rebuild Anode Dividers,all accel.power amps. (BA3.1, BA3.2, YA3.1 & YA3.2)	Laloudakis, Nickolaos	
Sector 4	Rewire all controls wiring for acceleration systems	Laloudakis, Nickolaos	
Sector 4	Modification to all Acceleration QEI"s	Laloudakis, Nickolaos, DeBoer, John	
Sector 4	Water infiltration & cabling at A/C Dipole		
Sector 4	Clean up X4 Cavity (brake vacuum and clean them inside)	Laloudakis, Nickolaos, Hseuh, H.C.	
Sector 4	Replace PA to transition pieces, all acceleration stations & replace 1 window	Laloudakis, Nickolaos, Hseuh, H.C.	
Sector 4	Stochastic cooling kicker bake (NEG?)	Hseuh, H.C, C.J. Liaw	
Sector 4	Replace SC Fundamental Mode Damper (Y&B)	Hseuh, H.C	
Sector 4	Replace Fundamental Mode Damper bellows	Hseuh, H.C	
Sector 4	Remove short from Common area	Laloudakis, Nickolaos, Hseuh, H.C.	
Sector 4	Replace window in YS3.3	Laloudakis, Nickolaos, Hseuh, H.C.	
Sector 4	Coat & replace AC windows (B&Y)	Hseuh, H.C	June
Sector 4	Landau breaker relocated outside of tunnel	Feng, P.K.	
Sector 5	Removal of both beamlines at sector 5 Triplet for Mag. Electrical testing	Hseuh, H.C.	
Sector 5	BPM System - Module relocation - Alcove 5C	Lehn, Dan	
Sector 5	Flag Profile Monitors - valves & filters	Lehn, Dan	
Sector 5	ZDC under C-A control	Drees, Angelika, Lehn, Dan	
Sector 5	Repair helium leak BI5	McIntyre, G., Hseuh, H.C., Seberg, Scott	
Sector 5	Adding connectors to Quench Detection cable (Rotator)	Ribaudo, Paul	2-3 days
Sector 5	Triplet roll removal & vibration investigation	McIntyre, G., Hseuh, H.C., Seberg, Scott	
Sector 5	NEG pipes, bake	Hseuh, H.C	
Sector 6	ZDC under C-A control	Drees, Angelika, Lehn, Dan	
Sector 6	BPM System - Module relocation - Alcove 7A	Lehn, Dan	
Sector 6	Flag Profile Monitors - valves & filters	Lehn, Dan	
Sector 6	Adding connectors to Quench Detection cable (Rotator)	Ribaudo, Paul	2-3 days
Sector 6	NEG pipes, bake (inner warm bore only)	Hseuh, H.C	
Sector 6	Installation of vertical collimators inner (yellow) ring & bake		
Sector 6	Pin diode array & BLM installation	Lehn, Dan	
Sector 7	Installation of new SST gas piping, mixing house to 1008 IR	Pearson, Charles	
Sector 7	Primary Scrapers, brakes, motors, API enable & test	Lehn, Dan	
Sector 7	Installation of crane access equipment & maintenance	Pearson, Charles	
Sector 7	FCAL & ZDC/SMD maintenance ?	PHENIX	
Sector 7	Relocating of ALCOVE 7C **(cancelled)**		
Sector 7	Replace VME crates at 7C alcove	Oerter, Brian	
Sector 7	Adding connectors to Quench Detection cable (Rotator)	Ribaudo, Paul	2-3 days
Sector 7	ZDC under C-A control	Drees, A., Lehn, Dan	
Sector 7	NEG pipes, bake (outer warm bore only)	Hseuh, H.C	
Sector 7	Install dehumidifier (?)	Benante, John	

Sector 8	FCAL & ZDC/SMD maintenance ?	PHENIX	
Sector 8	Primary Scrapers, brakes, motors, API enable & test	Lehn, Dan	
Sector 8	Installation of crane access equipment & maintenance	Pearson, Charles	
Sector 8	Adding connectors to Quench Detection cable (Rotator)	Ribaudo, Paul	2-3 days
Sector 8	NEG pipes, bake (outer warm bore only)	Hseuh, H.C	
Sector 8	Bake collimators, NEG pipes(?) (inner warm bore)	Hseuh, H.C	
Sector 9	Removal & re-installation of yellow kicker assembly (NEG pipes?) & bake	Pai, Chen, Hseuh, H.C.	
Sector 9	NEG pipes & bake, inner	Hseuh, H.C.	
Sector 9	1009 Install wall lighting near kickers	Benante, John	
Sector 9	Repair helium leak YO9-SNQ8 or YO9-SNQ7	McIntyre, Gary / C-A Vacuum Group	
Sector 9	Adding connectors to Quench Detection cable (Snake)	Ribaudo, Paul	2-3 days
Sector 9	ZDC under C-A control	Drees, Angelika, Lehn, Dan	
Sector 9	Remove both warm bore beamtubes	Hseuh, H.C	
Sector 10	Re-align the forward calorimeter (PCAL)	Pak, Robert (PHOBOS)	
Sector 10	1011 Install wall lighting near kickers	Benante, John	
Sector 10	ZDC under C-A control	Drees, Angelika, Lehn, Dan	
Sector 10	NEG pipes & bake, inner	Hseuh, H.C.	
Sector 10	Installation of vertical collimators outer ring & bake		
Sector 10	Pin diode array & BLM installation	Lehn, Dan	
Sector 11	BPM System - Module relocation - Alcove 11C	Lehn, Dan	
Sector 12	BPM System - Module relocation - Alcove 1A	Lehn, Dan	
Sector 12	Polarimeters - Y&B modify & test		
IP2	NEG-SS pipes, NEG-AL sleeves, & bake	Hseuh, H.C	
IP4	Paint floor (sector 4 at RF)	Benante, John	
IP4	FIX WATER PENETRATION, INSTALL OUTSIDE GUTTERS, REGRADE	Benante, John	
IP4	NEG pipes, remove shunt & bake	Hseuh, H.C	
IP4	Replace SC Fundamental Mode Damper, remove shunt	Hseuh, H.C	
IP6	NEG pipes, remove shunt & bake	Hseuh, H.C	
IP10	NEG-Be pipes, NEG-SS pipes, & bake	Hseuh, H.C	
IP10	Cable pulls for new electron-clearing solenoids (Cable crew?)	Smart, Loralie	
IP10	Solenoid installation & cable termination in 10:00 interaction region.	Smart, Loralie	
IP12	Repair roof leak in jet target area.	Benante, John	
IP12	Remove jet target from area, NEG pipes & bake.	Lehn, Dan	
Service Buildings	VALVE BOX WORK	Zapasek, Ron	May 3 - July 23,2004

	INSPECT, REPLACE RACK FANS	Zapasek, Ron
	ADD WEATHER STRIPPING TO RACK DOORS	Zapasek, Ron
	MAINT IN LINK BOXES (HARDWARE)	Zapasek, Ron
	MAINT. AC CONNECTIONS	Zapasek, Ron
	DYNAPOWER P.S. MAINTENANCE	Zapasek, Ron
	ADD INSULATION ON GAS LEADS, VALVE BOXES	Zapasek, Ron
	QPA/QPAIC MAINTENANCE	Zapasek, Ron
Locations TBD	Cryo Group power supplies modifications at various locations	Nicoletti, Anthony
1002A	Repair roof leak in control room	Benante, John
1002A	Reroute piping in Valve Box ?	Nicoletti, Anthony
1004A	AC Dipole - replace door switches & modify AC dipole power amplifiers	Lehn, Dan
1004A	Rebuild all anode divider in Storage Anode Power Supplies.	Laloudakis, Nickolaos
1004A	Rewire and reprogram HLRF PLC's	Laloudakis, Nickolaos
1004A	Calibrate all cables and all signals	Laloudakis, Nickolaos
1006B	Repair leak in Yellow Valve Box	Nicoletti, Anthony , Hseuh, H.C.
1008B	Reroute piping in Valve Box ?	Nicoletti, Anthony
1006A&B, 1008A&B, 1010A&B, 1101 Alcoves 1005C, 1007A-C, 1009A-C 1010a&B	INSPECT , REPLACE RACK FANS	Zapasek, Ron
	RECONNECT FANS?	Zapasek, Ron
	ADD FUSES TO FAN SERVICE LINES	Zapasek, Ron
	50 AMP CORRECTORS (645) [620]	Zapasek, Ron
1005/1005R	Replace faulty video camera & move to new location	Lehn, Dan
1005H	Roof leak repair	Benante, John

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Accelerator Controls – B. Venegas (ext. 3917, BP 7241), Brian Oerter (ext. 2799)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
1	Tandem Line (talcove, hitl 1, hitl2, hitl3			Install new VME chassis for instrumentation controls. This will depend on VMIC boards getting here.		None
2	AGS/LINAC			Remove RELWAY panels and cables		None
3	RHIC			Support BPM move in all remaining alcoves.		None
4	RHIC			New VME chassis for alcoves, half of the ring if possible.		None
5	RHIC			New ZDC chassis for C-AD Operations		None

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Access Controls – D. Meany (ext. 5329, Pager 0361), N. Williams (ext. 5346, Pager 0554)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
				RHIC		
1	RHIC	No	2 weeks	Design, Construct and install remote key tree and Iris scanner for RF area (1004A) Low	Electricians	
2	RHIC	No	4 weeks	Design a mode to test all PASS critical devices High	Electricians	
3	RHIC	No	8 weeks	Add GI gate to card reader network High	Electricians	
4	RHIC	No	2 weeks	Correct erroneous reset lamp faults at the GI gates High		
5	RHIC	No	2 weeks	Upgrade RHIC PASS A Div Processors to 5/04 and DH+. Need to pull RIO cable around ring High		
6	RHIC	No	2 weeks	Reconfigure CCTV system to free up SLC racks Medium		
7	RHIC	N/A		Complete PASS ODH upgrade in 1005R, 1005H, 1005E. By adding barometric com Divpensation to ODH measurement.		
8	RHIC	N/A		Remove UED1 gate reachback into X & arcs in A div Medium		
9	RHIC	N/A		Complete 1004 RF Pass interface in P9. Add flat panel Medium		
10	RHIC	N/A		Install online monitor PC on A B div both RHIC, NSRL Medium		
11	RHIC	N/A		Service all crash operators High		
12	RHIC	N/A		Check all GS gates for release buzzer and lamp High		
13	RHIC	N/A		Make interlock for Landau cavities permanent	Electricians	
14	RHIC	N/A		Install card reader at BRAHMs shutdown access gate High	Electricians	
15	RHIC	N/A		Relocate UPS in 1005H compressor building	Electricians	

16	RHIC	N/A	Replace all ODH Sensors	Electricians

NSRL

1	NSRL	N/A	Modify NSRL PASS to D1/D2 as pri critical device LOW	

BOOSTER/AGS/SEB

1	SEB	N/A	Remove security hardware at C3 Tgt. MED	
2	SEB	N/A	Certify D Line for May Run HIGH	

ATF

1	ATF		Install and test hardware for chicane interlock	

REF EXP

1	REF Exp	N/A	Redesign new security system for new Exp in REF	Electricians

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Beam Components & Instrumentation – D. Lehn (ext. 4542, Pager 4276), Tony Curcio (ext. 4659, Pager 4270)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
				RHIC		
1	RHIC Ring – All Sectors 1002A, 1004B, 1005E, 1007W, 1008B, 1010B, 1012A		200 hours	BLM Systems – a) Lockout of all sectors as needed b) Termination of spare cables @Q12's c) Full checkout of all sectors prior to startup. d) Removal/Replacement of BLM's as needed for bakeouts. e) Installation & setup of 2 new BLM's for Vertical Collimators (location TBD)	HP - Survey	
2	RHIC Ring Sectors 7 & 8 1008B		24 hours	Primary Beam Scrapers – a) Install Brake Controls b) Install new motors c) Install API enable d) Test system fully	HP - Survey	
3	RHIC Ring All Sectors		800 hours	BPM System – a) Module relocation for following alcoves 3A/3C/5A/5C/7A/11C/1A 1) Removal of old Firewire cable 2) Removal of old Timing cable 3) Removal of all brackets 4) Moving of all modules to alcoves 5) Pulling of all new cables 6) Setup of all modules in alcoves b) Repair/Replacement of all bad modules (List to be generated).	Cable Crew HP – Survey Controls Group	
4	RHIC Ring Sectors 1 & 2		16 hours	Movable BPM – a) Install all covers as needed b) Inspect motion control after cover installation	HP - Survey	
5	RHIC Ring Sector 12 1012A		8 hours	CNI Polarimeter – a) Inspect motion control for Blue and Yellow Polarimeter b) Perform mods as needed – list to be generated.	HP – Survey	

6	RHIC Ring Sectors 5 & 6	16 hours	Flag Profile Monitors – XF1, XF2, YF1 & YF2 a) Install in-line valves for compressed air isolation b) Upgrade neutral density filter assemblies	HP-Survey
7	RHIC Ring Sectors 1 & 2	8 hours	Roman Pots – a) Inspect motion control devices b) Investigate +5V Logic Loss	HP-Survey
8	RHIC Ring Sectors 9 & 10	400 hours	Abort Kickers – a) Removal of yellow magnet assembly – transport to 919-B. b) Modification of all vacuum chambers c) Reinstallation of assemblies	HP – Survey Riggers Survey Group Vacuum Group
9	RHIC Ring 12 IR 1012A	40 hours	Jet Polarimeter – a) Remove Jet Polarimeter from ring b) Perform all work needed in tunnel (list to be generated).	HP – Survey
10	RHIC 1005 /1005R 1005S	8 hours	Cryo Video – a) Replace faulty video camera b) Move 1 camera to new location	Cryo Group
11	RHIC 1004B	TBD	AC Dipole – Replace intermittent door switches	
12	RHIC Sectors 1 & 2	16 hours	Warm Bore Area – Clean up and tag all loose cables	
13	RHIC Ring Sectors 1 & 2 1002A	80 hours	Schottky Cavity – a) Repair vacuum leak b) Recommission Motion Control c) Install all safety covers	Vacuum Group Survey Group
14	RHIC Ring 1002A	8 hours	Tune Meter System – a) Perform maintenance on system b) Cleanup +5V Distribution	
15	RHIC Ring	8 hours	Motion Control Systems – Perform Maintenance on all motion control devices – Scrapers/Collimators/Polarimeters/MBPM	
16	RHIC Ring Sector 6 & 10 1007W/1010A Tentative	200 hours	Vertical Collimators – a) Install, wire and test 2 new collimators (location and work list TBD)	Riggers Vacuum Group Survey Group Cable Crew Controls Group
17	RHIC Ring Sector 6 & 10 1007W/1010A Tentative	8 hours	Pin Diodes – a) Install, wire and test new Pin Diode Arrays (location and work list TBD)	Cable Crew Electricians Controls Group
18	RHIC Ring	TBD	Stochastic Cooling – a) Installation of new Cooling Tanks (location and work list TBD).	Survey Group Controls Group Vacuum Group Cable Crew
19	RHIC Ring	TBD	ZDC – a) Support C-A portion of System (location and work list TBD)	Controls Group
20	RHIC Ring	16 hours	Bakeouts – Support all bakeouts with necessary LOTO, device removal, cable removal etc.	Vacuum Group

21	RHIC Ring Sector 12	TBD	Luminosity Monitor – If ready after LBNL Testing	
22	RHIC Ring	TBD	Hodoscopes – Possibility of removal from 12IR	
23	RHIC Ring	8 hours	Triplett Opening – Support mechanical work with removal of BLM's as necessary	
24	RHIC Ring Sector 7 & 8	8 hours	Pin Diodes – Secure stands to floor	
25	RHIC Ring	TBD	IPM – Possible Upgrades	

ATR

1	ATR	24 hours	Flag Profile Monitors – UF2, UF3, UF4, UF5, WF1, WF2, and WF3 a) Install inline valves on air lines b) Upgrade all neutral density filter assemblies c) Replace flags as necessary after inspection	HP-Survey Vacuum Group
2	ATR	8 hours	BLM System – Perform checkout prior to beam	HP-Survey
3	ATR	8 hours	BLM System – a) Complete installation of Integrator protection daughter boards and test. b) Cleanup Portable BLM's for U/V	
4	ATR	24 hours	BPM System – a) Repair all modules as necessary (Detailed list to be generated).	
5	ATR	TBD	UF2 – Modifications/Upgrade ?	HP Survey

TTB

1	TTB	40 hours	Instrumentation – Inspect & Test all BIPS (Beam Instrument Packages) prior to startup	Tandem Personnel
2	TTB	40 hours	Multiwires – a) Complete installation of Integrator protection daughter boards and test b) Verify Wires with test box & repair electronics as necessary.	Tandem Personnel
3	TTB	4 hours	TTB XF29 – a) Disconnect Prior to 29/141 Harp Bakeout b) Reconnect and test when bakeout complete	

BOOSTER

1	930UEB	40 hours	Instrumentation Racks – Clean up racks and cable trays	Electricians
2	Booster Ring 930UEB	40 hours	RLRM System – a) Investigate Gas Alarm contacts b) Investigate/Repair Argon leaks D-F c) Upgrade Loss Monitor boots/fittings d) Replace all remaining poly-flo lines e) Tie in C5 Short Loss Monitor	HP-Survey Water Group Waste Group
3	Booster 914/930UEB A10 House	16 hours	Multiwires – a) Complete installation of Integrator Protection Daughter boards and test. b) Verify Wires with test box and repair	

			electronics as necessary. c) Modify for remote Gain Control	
4	Booster Ring 930A	80 hours	D3 IPM – a) Re-Install all cabling b) Construct cover for HV Feedthroughs c) Repair AC Power problems d) Complete electronics upgrade	HP-Survey Electricians
5	Booster 914	24 hours	Video – a) Install remote controls for F6 & BTA Flags	Controls
6	Booster Ring	400 hrs	E7 Half Cell – a) Support Removal/Repair/Reinstallation	Riggers, Vac. Water Group, Power Supply
7	Booster Ring	80 hours	RING – a) Check and remove all unapproved grounds including B6 Beam Dump b) Check all DCCT's	HP - Survey
8	Booster Ring	300 hrs	Foil Stripper – a) Pull BTA foil stripper & replace foils b) Test device & support Bakeout c) Motion Control Upgrade	Vacuum Group HP - Survey
9	Booster Ring	40 hours	TTB 29/141 a) Support installation and test of replacement harp b) Repair/Replace Rad-damaged wires	Vacuum Group HP - Survey
10	Booster Ring	80 hours	BPM – a) Investigate A3 (Open) and C3 (Shorted) Filter assemblies above racks. b) Install Air Filter Assemblies c) Repair exhaust fan on C Sector Rack d) Remove Items from Ring e) Phase Match B4 & C5 Cables	HP – Survey Joel Scott

AGS

1	AGS Ring	80 hours	Ring Grounds – a) Inspect and replace RC's, Shorts, DCCT's and Hybrids as necessary	HP – Survey
2	AGS Ring	4 hours	Video – Replace BNC feedthroughs @ 8/18 locations as necessary	HP – Survey Waste Group
3	AGS Ring	8 hours	H10 Septum – Install new video light assembly	HP-Survey Waste Group
4	AGS Ring	4 hours	UF1 – a) Install inline valve on air line b) Upgrade/Install neutral density filter assembly c) Remove failed fiber optic cable	HP – Survey Waste Group
5	AGS Ring	4 hours	Cleanup/Removal of legacy waste – a) North Conjunction b) C14 Alcove	HP-Survey Waste Group
6	AGS Ring B18 House E10 House	400 hours	IPM – a) Upgrade IPM Electronics including moving equipment out of tunnel (C14 Alcove) b) Modify vacuum ports as necessary c) Investigate HV Distribution d) Investigate Corrector Magnet Wiring e) Test all new controls	HP- Survey Vacuum Group Electricians Controls Group
7	AGS Ring J18 House	8 hours	J10 Beam Dump – Resolve TC issues	HP-Survey

8	AGS Ring HITL 2	80 hours	C15 Polarimeter – a) Rewire motor controls b) Test motion control as necessary c) Additional cables to be run (List TBD)	HP-Survey Cable Crew Electricians
9	AGS Ring	200 hours	A20 Current Transformer – a) Move device to A15 after modifications b) Move all cables c) Rodent remmant removal d) Test System	HP-Survey Vacuum Group Plant Eng.
10	AGS Ring	200 hours	A20 MW - a) Move device to A15 after modifications b) Move all cables c) Test System d) Repair intermittent control power problem	HP-Survey Vacuum Group
11	AGS Ring	24 hours	RLRM – Investigate Argon leaks (A & B fan Houses)	HP-Survey Water Group
12	911A	16 hours	Video – Replace all bad monitors in MCR	
13	911B	24 hours	Video – a) Continue upgrade of CATV System b) Troubleshoot/Repair Horizon Video Switch	Electricians
14	AGS Ring A10 House	40 hours	A20 Flying Wire – a) Removal of Device from Ring b) Disable all electronics c) Remove old cables	HP – Survey Vacuum Group
15	AGS Ring	4 hours	A5 Loss Monitor – Tie into gas system	HP-Survey
16	AGS Ring	24 hours	UXF1 – Replace Current Transformer	HP-Survey Vacuum Group
17	AGS F18	400 hours	B15 Blip Transformer I/L a) Install new transformers b) Test all new controls	HP – Survey Vacuum Group Controls Group Access Control Electricians
18	AGS Ring	8 hours	L20 – Replace damaged Flag	
19	AGS Ring 919B	400 hours	Sextupole Magnets - a) Build up spare magnets b) Swap out all “13” locations in ring.	HP-Survey Vacuum Group Water Group Riggers P.S. Group
20	AGS	80 hours	LINAC Video – Install/Test & Setup new reverse trunk	
21	AGS	8 hours	BTA Multiwires - a) Check all channels for bad wires b) Complete Integrator Protection daughter boards and test c) Install Remote Gain Control	
22	AGS Ring A10/E10/H10	TBD	BPM – a) Test/Repair/Calibrate as necessary all BPM	

			Modules in question	
23	AGS	TBD	AC Dipole – Modify Amplifiers	
24	AGS Ring	80 hours	H20 Septum – Pull of girder/Inspect/Re-Install	Vacuum Group HP Survey

NSRL

1	NSRL	24 hours	R-Line – Checkout of Beamline Prior to Run
2	NSRL	32 hours	Target Room – Complete Miscellaneous Tasks
3	NSRL	8 hours	Gas System – Modify Gas system as needed for N2

CABLE PULL LIST

RHIC

1	Sector 2	BPM Sector 2, 44 Cables
2	Sector 3	BPM Sector 3, 88 Cables
3	Sector 4	BPM Sector 4, 84 Cables
4	Sector 5	BPM Sector 5, 52 Cables
5	Sector 6	BPM Sector 6, 56 Cables
6	Sector 11	BPM Sector 11, 80 Cables
7	Sector 12	BPM Sector 12, 84 Cables
8	Sector 6	Collimators Sector 6, 9 Cables
9	Sector 10	Collimators Sector 10, 9 Cables
10	Sector 6	Pin Diodes Sector 6, 8 Cables
11	Sector 10	Pin Diodes Sector 10, 8 Cables
12	Sector 1	ZDC Sector 1, 5 Cables
13	Sector 2	ZDC Sector 2, 5 Cables
14	Sector 5	ZDC Sector 5, 5 Cables
15	Sector 6	ZDC Sector 6, 5 Cables
16	Sector 7	ZDC Sector 7, 5 Cables
17	Sector 8	ZDC Sector 8, 5 Cables
18	Sector 9	ZDC Sector 9, 5 Cables
19	Sector 10	ZDC Sector 10, 5 Cables
20	Sector 4	Stochastic Cooling Sector 4, 10 Cables

21	12 IR	Jet Polarimeter, (TBD # of Cables)
22	Sector 12	CNI Polarimeter (TBD # of Cables)
23	Power Supply System 1004B	1004B output compartments to 1004B control room

AGS

1	B15	BLIP I/L Transformers, 10 Cables
2	C15	C15 Polarimeter (TBD # of Cables)
3	A18 House to AGS Ring A18	Snake Power Supplies Corrector power supplies Warm up heaters

ATR

1	U U/S	UF2 Flag (TBD # of Cables)

BOOSTER

1	BTA	Foil Stripper BTA (TBD # of Cables)

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Collider Electrical Power Supplies – R. Zapasek (ext. 2189, Pager 4263), D. Bruno (ext. 5533, Pager 4135)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
				RHIC		
1	Valve Box Work		3 Months	Valve box rework 1002, 4, 6, 8, 10, 12		
2	Valve Box Work		2 Weeks	General Maint. Clean, check fans etc.		
3	Valve Box Work		1 Week	Modify Braids on Main P.S.		
4	Dynapowers (140)		3 Weeks	New Aux. Contacts		
5	Dynapowers (140)		1 Week	Install Mov's in rack supplies		
6	Dynapowers (140)		11 Days	Inspect Contactors on stand alones		
7	6000 Amp Switch		3 Days	Maint. Clean, Lube Switch		
8	6000 Amp Switch		2 Days	Replace DIN Fuse Holder		
9	6000 Amp Switch		2 Days	Add Lockable Switches HVPS		
10	QPA/QPAIC		1 Day ?	Maintenance IDC Connectors		

11	QPA/QPAIC	10 Days	Replacement Fan Switch
12	Alcoves	5 Days	Inspect, Replace Rack Fans
13	Alcoves	5 Days	Reconnect Room Fans ?
14	Alcoves	10 Days	Add Fuse to Fan Service Line
15	Alcoves	1 Day ?	Node Card
16	50 Amp Correctors (645) (620)	88 Days	Error Fault ????
17	RHIC Ring Misc.	5 Days	Maint. on DIN Rail Blocks
18	RHIC Ring Misc.	10 Days	Temp. Sensors Tripplets, DX
19	RHIC Ring Misc.	1 Day	Add Insulation on Gas Leads
20	RHIC Ring Misc.	30 Days	Voltage Monitor System
21	Service Bldgs.	2 Days	Inspect, Replace Rack Fans
22	Service Bldgs.	5 Days	Add Weather Stripping to Rack Doors
23	Service Bldgs.	5 Days	Maint. In Link Boxes (Hardware)
24	Service Bldgs.	5 Days	Maint. AC Connections
25	Sextupoles (24)	6 Weeks	Crowbar Circuit
26	Main Magnet Power Supply	5 Days	OCC Beleville Washers Maint
27	Main Magnet Power Supply	20 Days	Rework & Torque Power Connections
28	Main Magnet Power Supply	1 Day	Maint. Disconnect SW., Substation
29	Main Magnet Power Supply	1 Day	Main Contactor Inspect and Lube
30	Main Magnet Power Supply	10 Days	Quench SCR Gate Current Monitor

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Cryogenics – A. Warkentien (ext. 3140 , Pager 4420), A. Nicoletti (ext. 3961, Pager 7107)

Maintenance Period: Summer Shutdown 2004

RHIC

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
1	Main Compressor Charcoal Absorber Modifications			Modify the vacuum headers in the demisters area to eliminate oil contamination and carry over to the charcoal beds. Modify accordingly the positions of the pressure transducers.		
2	Compressor Rm Piping Modification			Finish the high-pressure bypass in the compressors room to protect the demisters from high velocities.		
3	Suction Header Oil Piping			Install a permanent oil drain from the suction header back to the oil sump.		
4	I/O Upgrade			AIP for upgrade 1005R and 1005H I/O.		
5	Refrigerator Cold Box Modifications			Replace temperature sensors in coldbox 3.		
6	Compressor Rm Piping Modification			Replace/repair the flowmeters associated with the outside coalescessors and the purifier.		
7	Turbine Repair and Maint.			Rebuild "A" turbines with hardened shafts		
8	Turbine Repair and Maint.			Install new filter assemblies on the rest of the turbines.		
9	Check plumbing in 2 and 8 o'clock valve boxes			Modify internal valve box piping to allow individual sextant warmup or cooldown. Must work around 80K cooler operation.		

10	Turbine Interstage Contamination Removal	Develop way to eliminate or locally clean contamination that builds up between turbines
11	Modify oil drain from intercoolers	Add line to bypass check valves on oil drain
12	Pneumatic System upgrade	Modify pneumatic system to prevent air from contaminating purifier done prior to the shutdown.
13	O2/N2 Analyzers	Integrate 1006B “SSC” gas analyzer into cryo sys. Some work may be done prior to the shutdown.
14	Compressor Rm Piping Modification	Modify the piping to allow continuous scrubbing of the helium in the storage tanks. Also modify the piping to allow for the scrubbing of the refrigerator cold boxes without going thru the charcoal beds and the demisters. Can work be done before or after the shutdown?
15	Power Loss Issues	Add Thermax Capacity for tank farm return lines.
16	Compressor Rm Piping Modification	Modify FS 2 compressor skid for individual operation of each compressor.
17	Compressor Rm Floor Vibration	Drill floor for injection of vibration damping material.
18	Refrigerator Cold Box Modifications	Process Review and Process Sheet for Modifying the cooldown procedure to allow introduction of liquid from storage to the supply line in the ring directly.
19	O2/N2 Analyzers	Re-plumb the analyzers to incorporate the Jlab’s Equipment in the compressor room. Also if the re-liquefier is going to be used, an analyzer station should be built into 1005E compressor room.
20	O2/N2 Analyzers	Plumb in analyzer stations in the valve boxes so that readings can be done more efficiently.
21	Vacuum Process Skid	Complete installation of Vacuum Pump Skid on the lower level of 1005R. This work will be started and may be completed during this running period.
22	Inspect and Clean Water Cooling Filter Screens	Any improvement gained from new screens at the water tower?
23	Replace/Repai r Leaky Process Valves	Identify process valves that leak and adjust if possible or replace
24	Replace Poor Performing valves	Review fault log for valves that stick or respond slowly.
25	Recalibrate valve positioners	Insure actual valve position matches signal output for proportionally controlled valves.

26	Repair Helium Leaks	Review results of Helium sniffer tests done during the run.
27	Turbine Repair and Maint.	Regular maintenance and inspection of turbine assemblies.
28	Painting	Painting of outdoor process piping and storage tanks. Inspect area to prioritize painting. Tanks can be painted during operations.
29	Replace Humphrey Solenoids (on applicable valves)	Identify continuous duty solenoids and replace with ASCO solenoids on the valve boxes. Solenoids on order.
30	Inspect and Repair Compressor Suction valve actuators	Actuator repair kits are on order.
31	Seal Gas Compressor Oil Drain Line	Modify oil drain line and valve to eliminate trapped oil problem.
32	Liquid Storage Area	Change JT valves to better match process requirements.
33	Routine Maint.	Vacuum Pumps, Oil cleaning pumps, helium circulators, air compressors, main compressors, oil pumps, intercoolers, aftercoolers.
34	Inspect Oil Pump inlet screens	Check for evidence of particle buildup.

AGS

1	AGS Cold Snake Installation	Install the AGS cold snake magnet with cryocoolers and LN2/Lhe precooling system.

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM JOBS SCHEDULING REQUEST

GROUP: Cryogenics Instrumentation – L. Masi (ext. 4479, Pager 8700), A. Reuter (ext. 3190, Pager 7175)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
1	1005H		146 days ?	CRISP/RTP I/O upgrade		
2	1005H		1 day ?	Automate Valve on purifier for air separation issue		
3	1005R		146 days ?	CRISP/RTP I/O upgrade		

4		150 days ?	Coldbox 3 temperature sensor replacement
5		3 weeks	Bentley-Nevada Upgrade
6	1005R	1 day ?	Check location of temp. sensors in CB1 and CB2
7	1005R	1 day ?	Wire actuators on valves H422 and H822
8	1005R	1 day ?	Programming for valves H422 and H822
9	Service Bldgs.		Wire and program smaller J-T valve at LSA
10	Service Bldgs.		Replace MKS flow controllers with Hastings flow controllers
11	Service Bldgs.		Replace Humphrey solenoids with Asco solenoids
12	Service Bldgs.		Complete vacuum connectors for VJRR and reliquefier
13	Control System	1 day ?	CRISP32 upgrade
14	Control System	2 days	UCX TCPI/P Upgrade

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM JOBS SCHEDULING REQUEST

GROUP: LINAC – V. LoDestro (ext. 5005, Pager 7264), B. Brisco (ext. 5007, Pager 4225)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
1	LINAC	1968 hrs	None	Linac planned maintenance	None	None
2	LINAC	80 hrs	None	Remove mod 3 7835 ps for repair	None	None
3	LINAC	80 hrs	None	Remove mod 7 7835 ps for repair and replace ind.	None	None
4	LINAC	40 hrs	None	Test and install new agc amp in rfq LLRF	None	None
5	LINAC	80 hrs	None	Improve rfq fast phase loop response	None	None
6	LINAC	40 hrs	None	Calibrate rf amp & phase system & tk to tk	None	None
7	LINAC	80 hrs	None	Put tank ion pumps on control system	None	None
8	LINAC	40 hrs	None	Install controls for resetting ion pumps	None	None
9	LINAC	160 hrs	None	Setup up controls and operate ref equipment	None	None
10	LINAC	120 hrs	None	Add water cooling to 7835 supplies	None	None
11	LINAC	80 hrs	None	Add flow switch interlock to 7835 water	None	None
12	LINAC	80 hrs	None	Change plc code to include the cap bank	None	None
13	LINAC	160 hrs	None	Change all cap bank resistors	None	None

14	LINAC	240 hrs	None	Install PLC controls in cap banks	None	None
15	LINAC	16 hrs	None	Remove ICR filament bucket	None	None
16	LINAC	80 hrs	None	Change PLC code to reflect filament change	None	None
17	LINAC	80 hrs	None	Make new LEBT solenoid	None	None
18	LINAC	40 hrs	None	Protoype and test new solenoid pulser ps	None	None
19	LINAC	8 hrs	None	Install flow switches on pol bms	None	None
20	LINAC	120 hrs	None	Install Savawatt switch in Mod Control	None	None
21	LINAC	4 hrs	None	Repair argon leak in blip	None	SS030001
22	LINAC	4 hrs	None	Repair cable on blip horz multiwire	None	SS030001
23	LINAC	120 hrs	None	Complete construction of SS modulators	None	None
24	LINAC	80 hrs	None	Install ACME supply for HEBT 2 Quad	None	None
25	LINAC	40 hrs	None	Add extra steering to HEBT for OPPIS	None	None
26	LINAC	160 hrs	None	Create new fast beam interrupt design	None	None
27	LINAC	8 hrs	None	Replace Ok to charge to 50KV Supply	None	None
28	LINAC	20 hrs	None	Install new multiwire cables for pol harp	None	SS030001
29	LINAC	8hrs	None	Install electronic for above cables	None	None
30	LINAC	8 hrs	None	Repair HEBT 5 SEM	None	None
31	LINAC	8 hrs	None	Repair BLIP SEM	HP	SS030001
32	LINAC	40 hrs	None	Replace all red hose on 7835 cavities	None	None
33	LINAC	200 hrs	None	Build new modulator load single tube	None	None
34	LINAC	2 hrs	None	Remove all master pulse delays	None	None
35	LINAC	16 hrs	None	Replace all vac valves with copper lines	HP & Vac	SS030001
36	LINAC	20 hrs	None	Strip cavity 7 Mod 6 7835 to fix output tuning	None	None
37	LINAC	20 hrs	None	Check grid drive to 25K in mods for stretch	None	
38	LINAC (IP)	16 hrs	None	Finish repair all source light links	None	None
39	LINAC	8 hrs	None	Replace ref 1st harp	Vac	SS030001
40	LINAC	20 hrs	None	Redo wiring for LTB mags for ext klixsons	None	SS030001
41	LINAC	16 hrs	None	Check movement of all tank tuners	None	SS030001
42	LINAC	8 hrs	None	Change out NJE in the blip line	None	None
43	LINAC	160 hrs	None	Update Fast Chopper controls to VME	None	None
44	LINAC	120 hrs	None	Cal all 7835 filament leads with shunt	None	None
45	LINAC	80 hrs	None	Make spare ext p.s. With behkle switch	None	None
46	LINAC	80 hrs	None	Make chopper with behkle switch	None	None
47	LINAC	40 hrs	None	Replace all measure flows in HEBT	Water	SS030001
48	LINAC	80hrs	None	Change driver 7651 Anode stat to outside	None	None
49		20 hrs		Flush out mod 8618 Filament water lines		

	LINAC		None		None	None
50	LINAC	20 hrs	None	Repair any 8618 grid ring and rehose	None	None
51	LINAC	40 hrs	None	Check all taper pin blocks in term room	None	None
52	LINAC (IP)	40 hrs	None	Change all driver anode columns	None	None
53	LINAC	8 hrs	None	Replace NJE supply in BLIP with new type	None	None
54	LINAC	8 hrs	None	Lower value of caps on phase buckets	None	None
55	LINAC (IP)	80 hrs	None	Build & install malf cards for polar line	None	None
56	LINAC	8 hrs	None	Remove old scr control driver hv	None	None
57	LINAC	40 hrs	None	Help water group with PLC install for pumps	Water	None
58	LINAC (IP)	160 hrs	None	Update Linac timing to rev1 & recable	None	None
59	LINAC	40 hrs	None	Set up faraday cup & control for tank 1	None	None
60	LINAC	320 hrs	None	Start modifying HEBT for EBIS install	None	None
61	LINAC	40 hrs	None	Complete installation of new SS Chopper	None	None
62	LINAC	40 hrs	None	Check tank 3 for sparking	HP & AVC	SS030001
63	LINAC	40 hrs	None	Replace 1-4 Ion Pump	HP & VAC	SS030001
64	LINAC	80 hrs	None	Add Emerg Gen power to source area	Elect	None
65	LINAC	80 hrs	None	Add breakers to Sol #2 and LQ 13, 14, 15 RSLOTO	Elect	None
66	LINAC	80 hrs	None	Change solenoid PS location for water	None	None
67	LINAC	80 hrs	None	Braid all mod grid deck ps	None	None
68	LINAC	40 hrs	None	Check trip point of all mod grid deck ps	None	None
69	LINAC	20 hrs	None	Check Quad 1-1 1-2 for operation ext choke	None	None
70	LINAC	40 hrs	None	Rebuild all LEBT Vat Valves	Vac	None
71	LINAC	40 hrs	None	Modify 7835 cavity flow switch indicators	None	None
72	LINAC	20 hrs	None	Change Batteries in PLCs	None	None
73	LINAC	40 hrs	None	Build & install new elect. Crowbar counter	None	None
74	LINAC	40 hrs	None	Remove SNS Vac Box from HEBT	HP & Vac	SS030001

JOBS SCHEDULING REQUEST

GROUP: Main Ring P.S. Systems – M. Bannon (ext. 7704, Pager 4224), I. Marneris (ext. 7027, Pager 4255)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
				SIEMENS 929		
1	Siemens 929			Siemens Maintenance		
2	Siemens 929			Install New Exciter Power Supply, Transformer and all it's control and power cables.		
3	Siemens 929			Test new exciter power supply using AGS Ring as load. (time frame is between July 10 thru August 1 or 2) (during the day)	Everyone's	
4	Siemens 929			Install new lasers.		
5	Siemens 929			UPS's – Preventative Maintenance		
				WESTINGHOUSE		
1	Westinghouse			MG Set Maintenance		
2	Westinghouse			Inspect Oil Filter for Fillings and/or debris		
				RHIC		
1	RHIC			RHIC – Inspect X-Y arc power supply transformers for nitrogen leaks		
2	RHIC			UPS's – Preventative Maintenance		
				AGS		
1	AGS			Test and Commission new Horz. Sext. Power Supply		
2	AGS			Install 9 new Horz. Sextupole Magnets in the AGS Ring at the 13 locations. A13, B13, C13, etc.		
3	AGS			Install Sextupole Klixon Monitor Rack in Bldg. 929		
4	AGS			Install Klixons on all 12 Horz. Sextupole Magnets		
5	AGS			Install cables around the ring for Horz., Verti., & Dynamic Sextupole Klixon monitoring to Bldg. 929.		
6	AGS			Install two new timing cables under road between A10 and L18A house for L20 pos/angle P.S.		
7	AGS			Install BLW's (#6 awg welding cable) around MM at the following locations.		
8	AGS			UPS's – Preventative Maintenance		

9	AGS	Horz. Quad commission to run at higher current approx. 700 amps
10	AGS	Possible Klixon monitoring of AGS Quads ????

BOOSTER

1	Booster	Booster MMPS preventative maintenance
2	Booster	Booster E7 Main Magnet ½ cell replacement
3	Booster	Booster MMPS new PLC program from Advisor to Control View to RS view
4	Booster	Test all inputs and output of all plc's and test new program.
5	Booster	Booster Horz. Quad input for harmonic correction needs gain modification and possible design change.
6	Booster	UPS's – Preventative Maintenance
7	Booster	Interface and commission NSRL spill servo learn mode

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM JOBS SCHEDULING REQUEST

GROUP: Maintenance – R. Zaharatos (ext. 7205, Pager 4281), J. Benante (ext. 2745, Pager 1207)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
1	911 Tunnel			Install water tight covers for outer wire tunnel to Term. Rm.	Carpenters	
2	913 Ring			Lighting upgrade – N. Conj., Emerg. Lights G-H, H10-J1		
3	913 Fan Hses.			Install remote Fan Controls. D has outside manual ctrl.	PE/AC	
4	913 Ring			Identify and tag disconnected cables – Quadraplex at HI & I. RF cables at AB, CD, J. L. and LA. Action #622.1.13	Bannon, Laloudakis	
5	913 Ring			Re-label Circuit Panel Legends – BL443B@D8, XX432@B8, DLXX433B@A8, DL419B@L8; DL413D@K8, DL412B@J8, XX@I8		
6	913 Ring			Tag open-ended cables: E16; E5, C10:L17. Across from L11; L6: H17: inside at L6, F12, H20. 00-406		
7	913 Fan Hses.			Paint or replace Fan Hse. Entry doors as required.	PE/Painters	
8	913 Ring			Install covers over all outdoor wiring sleeves to Ring		

9	913 Ring	Upgrade utility AC wiring (outlets and lighting)	Electricians
10	913 Ring	Fire detection system upgrade	Fire Alarm Electricians
11	E10 House	Repair entry stairs handrail	

RHIC

1	RHIC Tunnel	Repair leaks in RF area	Pendzick
2	RHIC Tunnel	PM's on Tunnel exhaust Fans	AC Electricians

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM JOBS SCHEDULING REQUEST

GROUP: Power Distribution – T. Nehring (ext. 5275, Pager 4246)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
				RHIC		
1	Substation 1002B		Week of Jun. 7th	Perform Preventative Maintenance, Replace Temperature Gauge (3 days, PT)		
2	Substation 1004B, 1004C, 1004D		Week of Jun. 14th	Perform Preventative Maintenance, Inspect 15 kV Lineup (3 days)		
3	Substation 1005E		June	Perform Preventative Maintenance (1 day)		
4	5 kV Mcc's		Jun/Jul	Perform Preventative Maintenance (3 weeks)		
5	Substation 1006D, 1006E, 1006F, 1006G, 15 kV Breaker		Week of Sept. 13th	Perform Preventative Maintenance, PM 15 kV Breaker, Soft start for STAR to be tied in. (1 day)		
6	Substation OH Line			Inspect OH Line (5 days)		
				AGS		
1	911N, A		Jul 17th	Perform Preventative Maintenance (1 day)		
2	Substation K1, K2, K3, P1, P2		Week of Jun. 21st	Perform Preventative Maintenance (3 days)		

3	Substation M1, M2, M3, SB1, SB2	Week of Jul. 12th	Perform Preventative Maintenance (3 days)
4	Substation F1, F2, F3, G, G2 old MPS	Week of Aug. 23rd	Perform Preventative Maintenance, Tie in new switchgear for E-Cooling (3 days)
5	Substation M5, M6	Week of Jul. 26th	Perform Preventative Maintenance (1 day)
6	Substation PM AGS areas	Early August	Inspect and perform preventative maintenance panel, starters, etc. various areas of AGS (fan houses, etc.)

BAF

1	BAF SW	Week of Jul. 19th	Replace pad mount switch, Inspect and measure for feed thru replacement.

LINAC

1	Substation L1, L2, L3	Week of Aug. 23rd	Perform Preventative Maintenance, Replace feed thru for upper cables.

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Pulsed Power – R. Zapasek (ext. 2189, Pager 4263), A. Zhang (ext. 5369, Pager 7248)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS

AGS

1	AGS			G10 Kicker, replace caps, maint. & tuning ZHANG		
2	AGS			A5 Kicker, feed through maint. ZHANG	Beam Comp.	
3	AGS			DC Bump, Install Klixons MI		
4	AGS Ring		20 days	Assembly 3 Rack System		
5	AGS Ring		20 days	Install Cold Snake System		

BOOSTER

1	Booster			F3 Kicker, General Maint. ZHANG		
2	Booster			Ext. Bump PS's, Add Test Points LOCKEY/TAN		

RHIC

1	RHIC			Inj. Kickers, Replace Pressure Switches ZHANG		
2	RHIC			Abort Kicker, Maint. MI		

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM JOBS SCHEDULING REQUEST

GROUP: RF Group – N. Laloudakis (ext. 7177, Pager 4261), A. Zaltsman (ext. 2976, Pager 4259)

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
				RHIC		
1	Tunnel	No		Rebuild Anode Dividers in all acceleration Power Amps. (BA3.1, BA3.2, YA3.1 and YA3.2)	No	No
2	Tunnel	No		Rewire all controls wiring for acceleration systems	Yes, Elect. to mount boxes)	No
3	Tunnel	No		Modification to all Acceleration QEI's	Yes, Pump Rm	No
4	Tunnel	No		Clean up X4 Cavity (break vacuum and clean inside)	Yes, Vac. Grp	No
5	Tunnel	No		Replace PA to cavity transition pieces on all acceleration stations and replace one window	Yes, Vac. Grp	No
6	Tunnel	No		Remove short from Common area	Yes, Vac. Grp	No
7	Tunnel	No		Replace window in YS3.3	Yes, Vac. Grp	No
8	Bldg. 1004A & Tunnel	No		Calibrate all cables and all signals	No	No

9	Bldg. 1004A & Tunnel	No		General clean up (replace air filters remove unused wires)	No	No
10	Bldg. 1004A	No		Rewire and reprogram HLRF PLC's	No	No

BOOSTER

1	Bldg. 942 Tunnel			Install 2 each ENI's In A3 and B3 locations (Fast Feedback)	Yes, Pump Rm & Electricians	Yes

AGS

1	Bldg. 913			Finish rest of gap short relays	No	Yes
2	Bldg. 913			Recheck and retube all feedback amps (10 each) before start up.	No	Yes
3	Bldg. 913			Replace or clean all air filters (PM)	No	Yes
4	Bldg. 913			Replace or clean all water filters (PM)	Yes, Pump Rm	Yes
5	Bldg. 929			Replace all shorted capacitors in anode power supplies IJ, JK, E and B	Yes, Riggers	No
6	Bldg. 929			Modify all kepco power supplies to 110 VAC and connectorize all screen power supplies	No	No
7	Bldg. 929			General clean up (power supplies and all filters)		
8	Bldg. 929			Remove feedback screen modulation chassis	No	No

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM JOBS SCHEDULING REQUEST

GROUP: Vacuum – Supervisor: Steve Gill, Ext 4627, Pager 4164 – Addtl. Contact: Mike Mapes, Ext. 2841, Pager 4277

Maintenance Period: Summer Shutdown 2004

AGS

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS
1	AGS / F	CAN		Replace F-10 SEPTUM		Rwp Req.
2	AGS / HI			Check / Replace H-20 Ion Pump? H-20 Ion Pump Cable? (with item #3)	DL / JB	Rwp Req.
3	AGS / HI			Remove H-20 Septum from girder for inspection (with item #2) (install straight section temporarily & restore vacuum integrity)	JB	Rwp Req.
4	AGS Ring & A10/E18/H10		May-Sept	Vacuum valve PLC Upgrade Includes replacing all valve solenoids in ring (RWP required for ring work only)	LS / DZ / DL / MC/ +	Rwp Req.
5	AGS / AB			Remove Inj. Harp and BCM from A-20 & install at A-15		Rwp Req.
6	AGS / AB			Remove Flying Wire and Sector Valves from A-20 & x-port to storage		Rwp Req.

7	AGS / AB		Install straight section if Cold Snake is not ready		Rwp Req.
8	AGS / AB		Install new Cold Snake at A-20		Rwp Req.
9	AGS / BC		Install new BLIP interlock x-fmr at B-15		Rwp Req.
10	AGS / C5-E15		IPM's .. Replace motors? Replace servo's?		Rwp Req.
11	AGS / LA		Replace L-20 Flag		Rwp Req.
12	AGS		Replace nine #13 Sextupole magnets & re-use beam pipe (list of sextupoles to follow)	JB / +	Rwp Req.
13	A10/E18/H10		Clear outstanding ion pump power supply problems (DNA's, etc.)	LS / DZ / DL	

BOOSTER

1	Booster / BTA	August	BTA foil drive sector valve installation. Bake		Rwp Req.
2	Booster / E	July	Replace E-7 magnet / Bake	VU	Rwp Req.
3	Booster / B	July	Electrically isolate B-6 Collimator ***(possibly may not need to vent)***		Rwp Req.
4	Booster	August	Final continuity check and connect remainder of i.g. collector cables	JS	Rwp Req.
5	HITL	5/17 – 6/7	Swap out harp in HITL Sector 29 … Change bellows?? Bake	VU / JS / +	Rwp Req.

BLIP

1	BLIP 1	June	Replace the two "B" ion pumps		Rwp Req.
2	BLIP 1	June	Wrap graphite filled beam pipe with heater tapes and bake (?)		Rwp Req.
3	BLIP 2		***Possibly*** replace window in wall at end of line		Rwp Req.

REF

1	REF		Restore vacuum integrity for upcoming run		Rwp Req.

ATR

1	ATR line / x-4 & 5		Replace X4-sv … vent X-4 & X-5		
2	ATR line / U1		Replace current x-fmr at UFX1		
3	ATR line / U2		Replace flag drive unit at UFX2		

RHIC

1	IP – 2	May/June	NEG-SS pipes, NEG-A1 Sleeves, Bake		
2	Yo-1	June/July	Install NEG pipes, new IPM MCP, Bake		
3	Bo-2	July/Aug	Schottky repair, install NEG pipes, new IPM MCP, Bake		
4	Yi-2	July/Aug	Schottky repair, install NEG pipes, Bake		

5	IP-4			NEG Pipes, Remove shunt, Bake	
6	Yo4-1			Coat, replace Acc. Cav. Windows	
7	Yo4-2			Replace 3.2 Stor. Cav. Window or 3.3 ???	
8	Yo4-3			Install / Bake SCK, Install NEG pipes?	
9	Bi4-1			Coat, replace Acc. Cav. Windows	
10	Bi4-2			Replace SC FMD	
11	Bi-5			Insert G5 triplet probes, NEG pipes / Bake	
12	Yo-5			Insert G5 triplet probes, NEG pipes / Bake	
13	Yi-6			Install NEG pipes / Bake / V Collimator installation ???	
			Tentative!	**Add the SWC FM damper upgrade to air cooling (qty 10) …**	**RF Group List**
14	IP-6		May/Oct.	NEG-SS pipes, Bake	
15	Bo-7		Sept/Oct.	Install NEG pipes / Bake	
16	Yo-8		Sept/Oct.	Install NEG pipes / Bake	
17	Bi-8		Jun/July	Bake collimators, install NEG pipes ??	
		IDK		**Clean up X4 Cavity (break vacuum and clean inside)**	**From RF group List**
18	Yo-9		May/July	Dump kicker repair, install NEP pipes / Bake	
19	Bi-9		July/Aug.	Install NEG pipes / Bake	
20	Bo-10		Sept.	Vertical Collimator (?)	
21	IP-10		May/Sept.	NEG – Be pipes, NEG-SS pipes, Bake	
22	Yi-11		Sept/Oct.	Modify SCU, Bake, NEG Pipes ????	
23	IP-12		May/Jun	Install NEG pipes, remove jet (?), Bake	

NOTE: When removing Kapton Solenoid wire for NEG pipes, save the Kapton Wire for future use.

24	RING / IP-10			Restore solenoids / NEW SOLENOIDS at IP-10	
25	Yo-9 (Q7-Q8)		Insulating	Repair snake He leaks (5e-2 range)	
26	Bi-5 (Q14 end)		Insulating	Repair He leaks (2e-3 range)	
27	6:00 Y Valve Box		Insulating	Repair He leaks between valves 6736 & 6740 (2e-3 range)	
28	G5 triplet		Insulating	Vibration & roll study	
				Replace PA to cavity transition pieces on all acceleration stations and replace one window	**From RF Group List**
29	RHIC tmp's			Perform maintenance	

30	RHIC ccg's	Maintenance / replace ?
31	RHIC ppa's	Maintenance / replace ?
32	RHIC valve airline	Install new air dryers?

C-A DEPARTMENT MAINTENANCE, REPAIR AND MODIFICATION PROGRAM
JOBS SCHEDULING REQUEST

GROUP: Water Group – Supervisor: J. deBoer, Ext 4668, Pager 4250 – Addtl. Contact: Larry Vogt, Ext. 4797, Pager 4273, R. Grandinetti, Ext. 7186, Pager 4139

Maintenance Period: Summer Shutdown 2004

JOB#	AREA WHERE WORK IS TO BE DONE	POSSIBLE DISRUPTIONS TO OTHERS	TIME PERIOD	JOB DESCRIPTION, RESPONSIBLE PERSON & GROUP DOING THE WORK	ADD'L. SUPPORT AND COMMENTS	HP SURVEY AND DETAILS

NOTE: The Water System Group at this time does not have any major tasks that will adversely affect the RHIC Facility. Most efforts will primarily be on cooling system maintenance.

RHIC BRAHMS FACILITY
Bldg. 1002

1	RHIC-Brahms Bldg. 1002	System Off	May-Sept	Shut Down Tower, Drain, Clean basin and strainers. Repair tower as needed (repair TWR doors and PVC leak, Valve). Perform Maintenance on system equipment, Lube all auto manual stations.	None	None
2	RHIC-Brahms Bldg. 1002	System Off	May-Sept	Remove old make-up lines from tower and put in frost free valve	None	None
3	RHIC-Brahms Bldg. 1002	System Off	May-Sept	Clean HTXR and install back flushing valves and piping.	None	None

RHIC RF FACILITY
Bldg. 1004

1	RHIC RF Bldg. 1004	System Off	May-Sept	Shut Down Tower, Drain and clean basin and strainers. Repair tower as needed. Perform Maintenance on system equipment, lube all auto manual stations.	None	None
2	RHIC RF Bldg. 1004	System Off	May-Sept	Service and repair Ozone System	None	None
3	RHIC RF Bldg. 1004	System Off	May-Sept	Service All Bag Filters	None	None
4	RHIC RF Bldg. 1004	System Off	May-Sept	Possibly clean all filters and strainers in cavities and amps at 4 O'Clock RF area.	RF Personnel	None

RHIC CRYO COOLING TOWER No. 7 Bldg. 1005P

1	RHIC Cryo Tower 7, Bldg. 1005P	System Off	May-Sept	Shut down tower, drain and clean strainers. Clean pump suction pits, clean main feed strainer in Cyro Bldg. Perform Maintenance on system equipment. Lube all auto manual stations.	Carpenters for minor Tower Repairs	None
2	RHIC Cryo Tower 7, Bldg. 1005P	System Off	May-Sept	Install new level transmitter and controls	Electrical	None
3	RHIC Cryo Tower 7, Bldg. 1005P	System Off	May-Sept	Install New/Modify Valves (5) in suction pits, and concrete work	P.E. Grounds	None
4	RHIC Cryo Tower 7, Bldg. 1005P	System Off	May-Sept	Repair leak in Sump Basin No. 1	None	None

RHIC STAR FACILITY Bldg. 1006

1	RHIC STAR Bldg. 1006	System Off	May-Sept	Shut down cooling tower, drain and clean basin and strainers. Repair tower as needed. Perform maintenance on system equipment. Lube all auto manual stations.	None	None
2	RHIC STAR Bldg. 1006	System Off	May-Sept	Repair Oxygen System and Test	None	None
3	RHIC STAR Bldg. 1006	System Off	May-Sept	Clean MCW HTXR and install back flush valves	P.E. Plumbers	None
4	RHIC STAR Bldg. 1006	System Off	May-Sept	Complete installation for new chemical system and controls	Drew Chemical	None
5	RHIC STAR Bldg. 1006	System Off	May-Sept	Repair PSI control valve, install bypass piping for	P.E. Plumbers	None
6	RHIC STAR Bldg. 1006	System Off	May-Sept	Chill water lines, change from 2" to 3"	P.E. Plumbers	None
7	RHIC STAR Bldg. 1006	System Off	May-Sept	Possibly modify STAR Power Supply (3) controls and piping.	None	None
8	RHIC STAR Bldg. 1006	System Off	May-Sept	Remove old make-up line from tower and install frost free valve	P.E. Plumbers	None

RHIC PHENIX FACILITY Bldg. 1008

1	RHIC Phenix Bldg. 1008	System Off	May-Sept	Shut down tower, drain and clean basin and strainers. Repair tower as needed. Perform maintenance on system equipment. Lube all auto manual stations	None	None
2	RHIC Phenix Bldg. 1008	System Off	May-Sept	Modify tower make-up to tower, install make-up in building. Remove old make up lines and put in frost free valve for tower cleaning.		None
3	RHIC Phenix Bldg. 1008	System Off	May-Sept	Complete installation for new chemical system and controls	Drew Chemical	None
4	RHIC Phenix Bldg. 1008	System Off	May-Sept	Install supply and return on tower for sediment removal unit	P.E. Plumbers	None

RHIC PHOBOS FACILITY Bldg. 1010

1	RHIC Phobos Bldg. 1010	System Off	May-Sept	Shut down tower, drain and clean basin and strainers. Repair tower as needed. Perform maintenance on system equipment. Lube all auto manual stations.	None	None
2	RHIC Phobos Bldg. 1010	System Off	May-Sept	Remount tower flow transmitter and clean. Add tee for cleaning.	None	None

RHIC COOLING TOWER No. 6 Bldg. 1000P

1	RHIC Injection Line Cooling Bldg. 1000P	System Off	May-Sept	**NOTE: Don Bruno wants to run cooling system for power supply testing, duration?** Shut down tower, drain and clean basin and strainers. Repair tower as needed. Perform maintenance on system equipment. Lube all auto manual stations.	None	None
2	RHIC Injection Line Cooling Bldg. 1000P	System Off	May-Sept	Disconnect Tower No. 1 cooling from ATR Injection Magnets and hook up main magnet cooling.	None	None
3	RHIC Injection Line Cooling Bldg. 1000P	System Off	May-Sept	Repack Temp Control	None	None
4	RHIC Injection Line Cooling Bldg. 1000P	System Off	May-Sept	Clean all bag filters and strainers	None	None